Lighting up your product!

The influence of retail lighting on product perception

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Lighting up your product!

The influence of retail lighting on product perception

Mariëlle Creusen, Sylvia Pont & Jan Schoormans

Lighting influences the way products look and can be used to better bring out certain product properties.
Existing research:
- **Mainly focused on store image and merchandise examination**
- **Mainly focused on one lighting characteristic: brightness**

This research investigated how light level, color temperature and diffuseness influence consumer perception of products.

Study 1

2 (light level) x 2 (color temp) x 2 (product) mixed experimental design

Between subjects

Light level (= brightness):
- Low (300 lux) or high (1000 lux)

Color temperature:
- Warm (2700 K) or cool (4000 K)

Left: 2700K (warm white), Right: 4000K (cool white)

Within subjects

Products: Sneaker and toaster

The products used in this study

Dependent variables

Perception on product value types (Creusen & Schoormans 2005). 3 item scales:
- Aesthetic value
- Symbolic value
- Perceived quality
- Perceived ease of use
- Functionalities

Lighting lab

- 82 subjects (about 20 per condition)
  People who saw the product before were removed: N = 72 toaster, 80 sneaker
- Students, gender balanced across conditions

The 4 lightning conditions

Results

Ancova per product value type, covariate age
- Cool light improved perceived **ease of use** (M_{cool} = 6.21, M_{warm} = 5.77; F (1, 67) = 8.00, p < .01) and perceived **quality** (toaster only: M_{cool} = 4.42, M_{warm} = 4.05; F (1, 67) = 6.02, p < .05)
- No main effect **brightness**
- Interaction color temp x brightness:
  - Dim cool light and bright warm light heighten **perceived functionality**

Conclusion

Expectations for **brightness**:
- Bright light heightens perception of ease of use and functionalities, as details are better visible
- Dim light heightens perception of quality and aesthetic value, as it increases a prestige image and aesthetic value of a store environment (Baker et al. 1994; Freyssinier 2006)

Our findings:

No main effect for brightness was found, but an interaction with color temperature for functional value.

Expectations for **color temperature**:
- Warm light heightens perceived quality and aesthetic and symbolic value as it is more pleasurable than cool light (Park & Farr 2007), gives a more high-end look and higher aesthetic impression for a supermarket (Quartier 2010)
- Cool (blue-ish) light heightens perceived ease of use and functionality, as a blue logo gives an impression of brand competence (Labrecque & Milne 2012)

Our findings:

Cool light indeed increased perceived ease of use. No effects were found for aesthetic and symbolic value.

Study 2

2 (light diffuseness) x 2 (product) mixed experimental design

Between subjects

Light diffuseness
- Diffuse light: softer shadows and highlights
- Directed light: sharper shadows, strong highlights and contrasts

Within subjects

Products: Two black and silver colored coffee makers (one with shiny materials and one with brushed/matte materials)

Left: diffused light, Right: directed light

Dependent variables

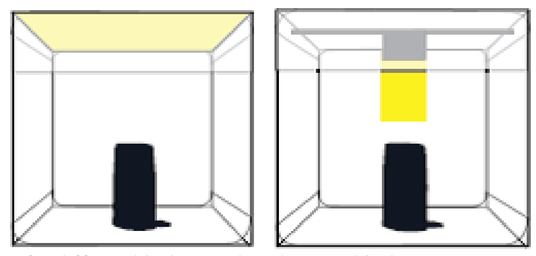
Perception on product value types (Creusen & Schoormans 2005). 3 item scales:
- Aesthetic value
- Symbolic value
- Perceived quality
- Perceived ease of use
- Functionalities

Plus **purchase intention** (2 items)

Lighting lab

- 60 subjects (30 per lighting condition)
- Students, gender balanced across conditions

The coffee makers are presented in a 1 m3 lighting box with a bright light level.



Left: diffused light, Right: directed light

Results

Anova per product value type

Diffused light leads to:
- Higher **aesthetic value**
  - $M_{diffused}$ = 4.69, M_{direct} = 3.86; F (1, 58) = 14.59, p < .001
  - Interaction with product: only sign for matte CM
- Higher **symbolic value** for matte CM only
  - $M_{diffused}$ = 3.55, M_{direct} = 2.66; F (1, 58) = 7.16, p < .001
- Higher **perceived quality**
  - $M_{diffused}$ = 5.00, M_{direct} = 4.29; F (1, 58) = 12.17, p < .001
  - Interaction with product: only sign for matte CM
- No effect on perceived **ease of use** and **functional value**
- Higher **purchase intention**
  - $M_{diffused}$ = 4.08, M_{direct} = 3.23;F (1, 57) = 7.00, p < 0.05
  - Interaction with product: only sign for matte CM
- Effects were bigger for the matte coffee maker than the shiny one

Conclusion

Expectations for **diffuseness:**

Directed light heightens perceived ease of use and functionality

Our findings:

Diffused light heightens aesthetic and symbolic value and perceived quality
- Maybe less contrast (diffused) is more pleasing to the eye
- Aesthetic and symbolic value and quality impression are holistic impressions, and the main form might get lost due to emphasis on details in directed light (Frandsen 1987)

General discussion

Project aim: provide recommendations about adapting lighting to the kind of product or product aspects that you want to emphasize, either for presenting products in store, in advertising and packaging, or in online product presentation.

Lighting was shown to influence product perception on several value types.

Dim cool and diffused light seems most beneficial.

Future research

- Different types of products (i.e., technical vs fashion products, impact of materials)
- More realistic context (now lab)

We are now replicating study 1 in an online environment (more realistic context and more subjects)

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